

**Notice of Allowability**

Application No.

10/712,164

Examiner

Prabodh M. Dharja

Applicant(s)

KIM, HYOUNG-RAE

Art Unit

2629

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12-17-2007.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

1. **Status:** Please all the replies and correspondence should be addressed to Examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 12-17-2007 under amendments, and faxed examiner amendments on 02-08-2008 and 02-12-2008; which have been placed of record in the file. Applicant's representative has authorized examiner to do examiner amendments during telephone interview on 02-12-2008 to add allowable claim limitations to independent claims 9 and 12 to expedite allowability of the instant application. Claims 1-13 are pending.

***Response to Amendment***

2. The amendment filed 12-17-2007 and faxed examiner amendments with remark on 02-08-2008 and 02-12-2008; do not introduce any new matter into the disclosure. The added material is supported by the original disclosure.

3. Claims 1-8 were allowed in the office action mailed on 08-15-2007.

4. Applicant has amended claims 9 and 12 to overcome prior art rejection. However, after further search and consideration; applicant has agreed and authorized examiner to do examiner amendments by amending allowable claim limitations to independent claims 9 and 12 to overcome newly cited prior arts of Sarrasin; Denis (US 5,638,091 A) and prior art of Hirai; Yoshinori et al. (US 5,953,002 A1). Applicant's arguments see Remark, filed on 12-17-2007; and faxed received with supplemental amendments on 02-08-2008 and 02-12-2008 with respect to Claims 9 and 12 regarding "Supertwisted nematic (STN) liquid crystal display (LCD) driver using an nFRC method, wherein n is a natural number, comprising: (a) counting a number of sub frames in a frame and generating a frame flag signal in response to the FRC selection signal in

accordance with the nFRC method; and wherein (b) inverting a polarity of an STN liquid crystal is inverted only once in each frame when the number of sub frames in the frame, counted in step (a), is n” have been fully considered, extensively searched in prior art as well as US PG PUB and are persuasive as they do overcome prior art rejection and newly cited prior arts; which puts application number 10712164 in condition for allowance.

### EXAMINER’S AMENDMENT

5. An examiner’s amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner’s amendment was given in a personal telephone interview with applicant’s representative Steven M. Mills on 02-12-2008.

The application has been amended as follows:

#### **In the Claims**

Claim 9 is amended as following.

Claims 9 (amended): A driving method of a super twisted nematic (STN) liquid crystal display (LCD) driver **using an nFRC method** that drives an STN LCD, **wherein n is a natural number**, the driving method comprising:

(a) determining whether a frame rate control (FRC) selection signal is in accordance with an nFRC method;

(b) counting a number of sub frames in a frame and generating a frame flag signal in response to the FRC selection in accordance with the nFRC method; and

(c) receiving [[a]] the frame flag signal which inverts a level of a liquid crystal polarity inversion signal in the frame, wherein and generating a the liquid crystal polarity inversion signal in the frame that inverts a polarity of an STN liquid crystal of the STN LCD only once in the frame when the number of sub frames in the frame, counted in step (b), is n.

Claim 12 is amended as following.

Claims 12 (amended): A driving method of a supertwisted nematic (STN) liquid crystal display (LCD) driver using an nFRC method, wherein n is a natural number, comprising:

(a) counting a number of sub frames in a frame; and generating a frame flag signal in response to the FRC selection signal in accordance with the nFRC method;

(b) inverting a polarity of an STN liquid crystal is inverted only once in each frame\_ when the number of sub frames in the frame, counted in step (a), is n.

***Allowable Subject Matter***

6. Claims 1-13 are allowed.

7. The following is an examiner's statement of reasons for allowance:

Claims 1-8 were allowed. Applicant has amended claims 9 and 12 to overcome prior art rejection. However, after further search and consideration; applicant has agreed and authorized examiner to do examiner amendments by amending claim limitations of independent claims 9 and 12 with allowable limitations to overcome newly cited prior arts of Sarrasin; Denis (US 5,638,091 A) and prior art of Hirai; Yoshinori et al. (US 5,953,002 A1). Applicant's argument filed on 12-17-2007; and faxed received with supplemental amendments on 02-08-2008 and 02-12-2008 are convincing. As argued by applicant in remarks under claim rejection page 6, last two paragraph, page 7, and page 8, paragraphs 1 and 2, the prior art of Sarrasin; Denis (US 5,638,091 A) and prior art of Hirai; Yoshinori et al. (US 5,953,002 A1); all of the prior art cited on 892's 1449's, searched in NPL and searched in PGPUB fails to recite or disclose the uniquely distinct features of the independent claims limitations below in combination with all the other limitations of independent claims recited:

**Supertwisted nematic (STN) liquid crystal display (LCD) driver using an nFRC method, wherein n is a natural number, comprising: (a) counting a number of sub frames in a frame and generating a frame flag signal in response to the FRC selection signal in accordance with the nFRC method; and wherein (b) inverting a polarity of an STN liquid crystal is inverted only once in each frame when the number of sub frames in the frame, counted in step (a), is n.**

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M Dharia whose telephone number is 571-272-7668.

The examiner can normally be reached on M-F 8AM to 5PM.

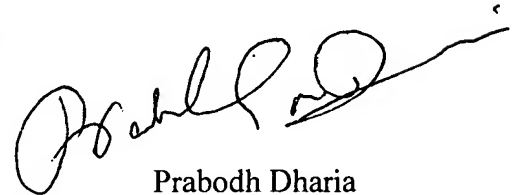
9. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231



Prabodh Dharia

Primary Examiner

AU2629

02-14-2008